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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,101	01/23/2004	James A. Harrington	879.1.018	7908

7590
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04/23/2007

EXAMINER

DOAN, JENNIFER

ART UNIT	PAPER NUMBER
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2874

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/764,101

Applicant(s)

HARRINGTON ET AL.

Examiner

Jennifer Doan

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14-23, 25-28 and 31-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-12, 14-23, 25-28, 31 and 32 is/are allowed.
- 6) ☒ Claim(s) 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment, filed on December 29, 2006, has been considered and entered.

Claims 13, 24, 29 and 30 are canceled.

Claim 33 is newly added.

Claims 1-12, 14-23, 25-28 and 31-33 are now pending.

The previous ground of rejection is now changed in this Office Action in response to the claim amendment. Since the new ground of rejection is necessitated by the amendment, this office action is made final.

Specification

1. Applicants' cooperation is requested in correcting any errors of which applicants may become aware in the specification.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

Art Unit: 2874

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington (U.S. Patent 5,815,627).

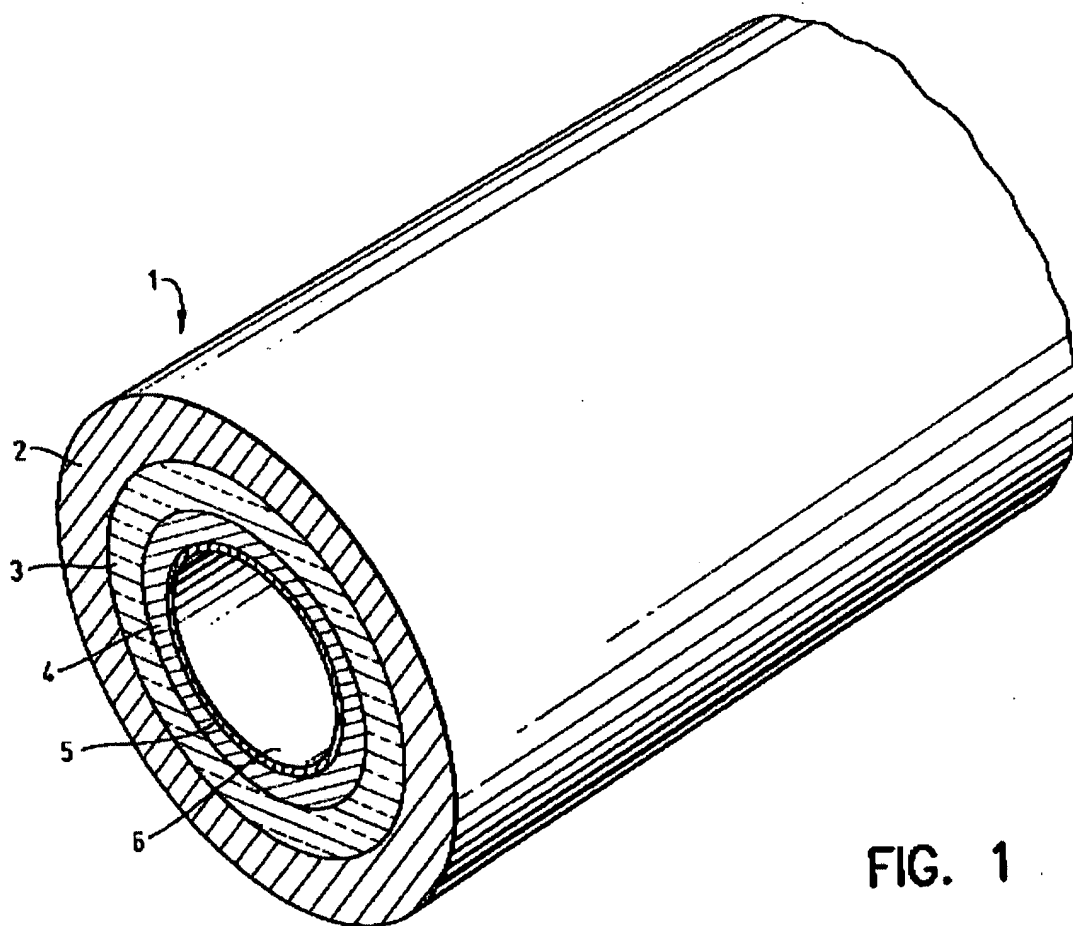
With respect to claim 33, Harrington (figure 1) discloses a method of fabricating a flexible, hollow waveguide using liquid phase deposition, comprising the steps of (a) depositing a metallic layer (4) on a smooth, inner bore surface of a hollow, flexible, silica-glass tube (3); and (b) depositing a sulfide layer upon the metallic layer (4) of step (a) (see column 6, lines 28-32 and 48-52).

Harrington does not explicitly disclose a cadmium sulfide layer, which deposited upon the metallic layer.

However, the cadmium sulfide layer is considered to be obvious. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to deposit upon the metallic layer of Harrington's device with a layer made by the material as claimed for the purpose of obtaining higher efficiency of optical signal transmission. It is also noted that it has been held to be within the general skill of a

Art Unit: 2874

worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.



Allowable Subject Matter

5. Claims 1-12, 14-23, 25-28 and 31-32 are allowed.

The prior art of record fails to disclose or reasonably suggest a flexible, hollow waveguide for transmitting radiation in visible and IR regions, comprising a composite of dielectric, sulfide-containing materials forming a photonic, bandgap tube transmitting in the visible and IR regions in combination with the other limitations of claims 1 and 16.

Claims 2-8 depend from claim 1.

Claims 17-22 depend from claim 16.

The prior art of record also fails to disclose or reasonably suggest a flexible, hollow waveguide comprising a composite of dielectric materials disposed upon the metallic layer featuring disparate refractive indices with a ratio of approximately 2:1, wherein the composite of dielectric materials form sulfide-containing layers in combination with the other limitations of claim 9.

Claims 10-12, 14 and 15 depend from claim 9.

The prior art of record also fails to disclose or reasonably suggest a flexible, hollow waveguide comprising a composite of dielectric materials disposed upon the smooth inner bore surface of said transparent annular body, featuring disparate refractive indices with a ratio of approximately 2:1, wherein the composite of dielectric

Art Unit: 2874

materials respectively comprise two sulfide layers in combination with the other limitations of claim 23.

Claims 25-27 depend from claim 23.

The prior art of record also fails to disclose or reasonably suggest a method of fabricating a flexible, hollow waveguide using liquid phase deposition, comprising the steps of depositing two sulfide-containing layers, cadmium sulfide and lead sulfide, respectively, upon said metallic layer of step (a) in combination with the other limitations of claim 28.

The prior art of record also fails to disclose or reasonably suggest a method of fabricating a flexible, hollow waveguide using liquid phase deposition, comprising the steps of depositing at first layer of cadmium sulfide upon an inner, smooth bore surface of a hollow silica-glass tube; and depositing at least a second layer of lead sulfide over the first layer of cadmium sulfide in combination with the other limitations of claim 31.

Claim 32 depends from claim 31.

Response to Arguments

6. Applicants' argument filed on December 29, 2006 has been fully considered.

7. With respect to claims 1-12, 14-23, 25-28 and 31-33:

Please refer to claim rejection 35 U.S.C. 103 above for claim 33.

Claims 1-12, 14-23, 25-28 and 31-32 are allowed.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Doan whose telephone number is (571) 272-2346. The examiner can normally be reached on Monday to Thursday from 6:00am to 3:30pm, second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2874

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jennifer Doan
JENNIFER DOAN
PRIMARY EXAMINER